Variations in management of Invasive Group B Streptococcal disease at a Tertiary Paediatric Centre

H. Bateman¹, E. Williams², L. Pareja-Cebrian², N.Embleton², E. Lim²

¹Newcastle University Medical School, ²Great North Children's Hospital Newcastle upon Tyne

Background

Group B Streptococcus (GBS) is a common cause of invasive neonatal infection. Incomplete treatment may be associated with worse outcomes and disease recurrence. Multiple guidelines exist resulting in confusion around treatment duration and need for Lumbar Puncture (LP).

Aim:

To complete a five year retrospective case note review of the management and outcomes of invasive GBS in a tertiary paediatric centre and compare to ESPID guidelines.

Methods

The guidelines recommend¹:

1. LP should be performed in all patients
2. GBS bacteraemia requires 10 days antibiotics
3. GBS Meningitis requires 16 days antibiotics (confirm CSF sterility at 48 hours, then 14 more days treatment)
4. Antibiotic monotherapy once GBS and clinical response confirmed

Infants aged 0-6 months with positive blood or cerebrospinal fluid (CSF) cultures identified from microbiology databases between 17/04/2012-03/05/2017 were included. (positive urine cultures representing contamination were excluded). Data was collected from patient notes and electronic health records.

Results

46 infants were identified.
34 had GBS bacteraemia and 12 had meningitis.
31 infants were term, 15 pre-term.
29 infants had early-onset, 17 had late-onset disease (7-89 days old at presentation).

Presenting Features GBS Disease

Lumbar Punctures (LP) rates

36(78.3%) infants had a LP, 10 (21.7%) did not
6/10 were too ill to have a LP
2/12 meningitis patients had second LP- at end of treatment not 48 hours

Length of Antibiotic treatment

Outcomes

6/46 patients suffered long-term disability, 3/46 died and 2/46 had GBS recurrence (1 meningitis and 1 bacteraemia).

Discussion

Patient outcomes for invasive GBS disease were comparable to national levels². However, more diagnostic LPs could be done to determine antibiotic treatment duration. Adherence to the guidelines for treatment duration is poor. This may be explained by lack of evidence and multiple conflicting guidelines.

Recommendations

1. All infants with confirmed GBS infection should have one LP to confirm diagnosis of meningitis or bacteraemia
2. Switch to antibiotic monotherapy once GBS and clinical response is confirmed
3. Oral antibiotic treatment could be considered to ensure minimum treatment duration is met
4. Future research needs to address optimal antibiotic duration and the need for repeat LPs.

References:

1. Oxford University Press. Manual of Childhood Infections: The Blue Book. Fourth ed. New York: Oxford University Press 2016
2. Heath P. Group B Streptococcal disease in infants. London: British Paediatric Surveillance Unit; 2016.